

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/018060 A3

(51) International Patent Classification⁷: **H01S 3/00**

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(21) International Application Number:
PCT/US2004/025989

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(22) International Filing Date: 11 August 2004 (11.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/494,102	11 August 2003 (11.08.2003)	US
60/494,272	11 August 2003 (11.08.2003)	US
60/494,321	11 August 2003 (11.08.2003)	US
60/497,404	22 August 2003 (22.08.2003)	US
60/503,659	17 September 2003 (17.09.2003)	US
60/503,578	17 September 2003 (17.09.2003)	US
60/529,443	11 December 2003 (11.12.2003)	US
60/529,425	12 December 2003 (12.12.2003)	US
60/543,086	9 February 2004 (09.02.2004)	US
60/546,065	18 February 2004 (18.02.2004)	US
60/548,216	27 February 2004 (27.02.2004)	US

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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(88) Date of publication of the international search report:
2 June 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: OPTICAL AMPLIFIER WITH SPACED THIN SLABS

(57) Abstract: The high-power-optical-amplifier of the present invention uses a number of spaced, thin slabs (e.g., disc-shaped doped-slabs that are stacked, with a space between discs), aligned to give an amplifier both with a high active cross-section and a very high surface area to volume ratio. More specifically, the present invention provides several methods that include the steps of aligning at least two or four slabs having a thickness dimension of less than one centimeter, substantially parallel to, and spaced from adjacent slabs, wherein the slab surfaces are rendered essentially non-reflective, optically pumping the slabs and passing an input beam through the surfaces wherein the beam is optically amplified in the slabs, and wherein the input beam is of an eye-safe wavelength.



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